

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A solid-state imaging element comprising:
a plurality of photoelectric converting regions which are arranged on a surface of a semiconductor substrate along a row direction and a column direction perpendicular to the row direction; and
color filters, wherein:
each of the photoelectric converting regions contains a main region having a relatively wide light-receiving area and a sub-region having a relatively narrow light-receiving area;
the color filters are provided above the main regions and the sub regions, respectively,
in some of the plurality of photoelectric converting regions, colors of the color filters provided above the main regions are different from those of the color filters provided above the sub regions, and
~~a partial photoelectric converting region within the some of the plurality of photoelectric converting regions outputs output~~ photoelectric converting signals having different spectral sensitivities ~~with respect to~~from the main region and the sub-region.

2. (Currently Amended) A solid-state imaging element comprising:
a plurality of photoelectric converting regions which are arranged on a surface of a semiconductor substrate along a row direction and a column direction perpendicular to the row direction, wherein:
each of said photoelectric converting regions contains a main region having a relatively wide light-receiving area and a sub-region having a relatively narrow light-receiving area; and
the photoelectric converting regions includes:
a first sort of photoelectric converting region in which both the main region and the sub-region output photoelectric converting signals having a first spectral sensitivity;

a second sort of photoelectric converting region in which the main region outputs a photoelectric converting signal having a second spectral sensitivity and the sub-region outputs a photoelectric converting signal having a third spectral sensitivity; and

a third sort of photoelectric converting region in which the main region outputs a photoelectric converting signal having a the third spectral sensitivity and the sub-region outputs a photoelectric converting signal having a the second spectral sensitivity.

3. (Currently Amended) A solid-state imaging element comprising:

a plurality of photoelectric converting regions which are arranged on a surface of a semiconductor substrate along a row direction and a column direction perpendicular to the row direction, wherein:

each of said photoelectric converting regions contains a main region having a relatively wide light-receiving area and a sub-region having a relatively narrow light-receiving area; and the photoelectric converting regions includes:

a first sort of photoelectric converting region in which both the main region and the sub-region store therein~~to~~ signal electron charges having a first spectral sensitivity;₁

a second sort of photoelectric converting region in which the main region stores therein~~to~~ signal electron charges having a second spectral sensitivity and the sub-region stores therein~~to~~ signal electron charges having a third spectral sensitivity;₂ and

a third sort of photoelectric converting region in which the main region stores therein~~to~~ signal electron charges having a the third spectral sensitivity and the sub-region stores therein signal electron charges having a the second spectral sensitivity;₃

the solid-state imaging element further comprising:

a vertical transfer portion for independently transferring the signal electron charges from ~~the photoelectric converting regions to the~~ main region and the sub-region along the column direction;

a horizontal transfer portion transferring the signal electron charges from the vertical transfer portion along the row direction; and

an output portion for outputting a signal corresponding to the signal electron charges transferred by said horizontal transfer portion.

4. (Original) The solid-state imaging element as claimed in claim 2, or claim 3 wherein: the first sort of photoelectric converting region is arranged in a rectangular lattice shape along both the row direction and the column direction perpendicular to the row direction;

both the second sort of photoelectric converting region and the third sort of photoelectric converting region are arranged in a staggering shape and are arranged as an entire region in a rectangular lattice shape along the row direction and the column direction perpendicular to the row direction; and

the first sort of photoelectric converting region, the second sort of photoelectric converting region, and the third sort of photoelectric converting region are arranged in the same arranging pitch at such positions which are positionally shifted by a 1/2 of the arranging pitch along the row direction and the column direction.

5. (Currently Amended) ~~A~~ The solid-state imaging element as claimed in claim 2 or claim 3, wherein:

the first spectral sensitivity to the third spectral sensitivity are any of spectral sensitivities ~~as to~~ of a red color, a blue color, and a green color.

6. (Currently Amended) ~~A~~ The solid-state imaging element as claimed in claim 5 wherein: the first spectral sensitivity corresponds to a spectral sensitivity of a green color.

7. (Currently Amended) A ~~The~~ solid-state imaging element as claimed in any one of claim 1~~claims 1 to 3~~, wherein:

the spectral sensitivity is determined by a color filter positioned above said main region and said sub-region.

8. (Currently Amended) A digital camera wherein:

the digital camera mounts thereon the solid-state imaging element recited in ~~claim 1~~any one of claims 1 to 3.

9. (New) The solid-state imaging element according to claim 1, wherein in each photoelectric converting region, the main region and the sub region are divided by element isolation region in plan view.

10. (New) The solid-state imaging element according to claim 2, wherein in each photoelectric converting region, the main region and the sub region are divided by element isolation region in plan view.

11. (New) The solid-state imaging element according to claim 3, wherein in each photoelectric converting region, the main region and the sub region are divided by element isolation region in plan view.

12. (New) The solid-state imaging element according to claim 2, further comprising: color filters provided above the main regions and the sub regions, respectively, wherein:
in the second sort of photoelectric converting region, a color of the color filter provided above the main region is different from that of the color filter provided above the sub region,
the color of the color filter provided above the main region of the second sort of photoelectric converting region is identical with a color of the color filter provided above the sub region of the third sort of photoelectric converting region, and

the color of the color filter provided above the sub region of the second sort of photoelectric converting region is identical with a color of the color filter provided above the main region of the third sort of photoelectric converting region.

13. (New) The solid-state imaging element according to claim 3, further comprising: color filters provided above the main regions and the sub regions, respectively, wherein:
in the second sort of photoelectric converting region, a color of the color filter provided above the main region is different from that of the color filter provided above the sub region,
the color of the color filter provided above the main region of the second sort of photoelectric converting region is identical with a color of the color filter provided above the sub region of the third sort of photoelectric converting region, and
the color of the color filter provided above the sub region of the second sort of photoelectric converting region is identical with a color of the color filter provided above the main region of the third sort of photoelectric converting region.